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IN THE U.S. PATENT AND TRADEMARK OFFICE

APPLICANTS: Ernest J. CLAXTON, III
Eugene F. POSER

APPL. NO.: 09/034,313 GROUP: 3745

FILED: March 4, 1998 EXAMINER: VERDIER, C.

FOR: FIELD-SERVICEABLE SOLIDS HANDLING VERTICAL
TURBINE PUMP

DECLARATION UNDER 37 C.F.R. § 1.132

Assistant Commissioner for Patents
Washington, D.C. 20231

February 11, 2000

Sir:

1. I, Dr. David N. Ivester, a resident at the address of 324 Amilee Graves Circle, Clarksville, Georgia 30523, declare and say that:
2. I am presently employed by Patterson Pump Company;
3. I graduated from Georgia Institute of Technology in 1975;
4. I have been an employee of Patterson Pump Company since 1997 and have been engaged in research and development in the area of pump design. I was involved in and had experience in developing the 21JHC Vertical Turbine Pump. Further experience included 7 years progressive responsible charge of projects engineering vertical turbine, vertical mixed flow and vertical axial flow pumps;
5. Because of my own education and experience, I believe myself to be one of at least ordinary skill in the art of vertical turbine pumps. Based on my

25 years of total experience and 7 years of vertical turbine pump experience, it is my opinion that one of ordinary skill in the vertical turbine pump art would be one with a mechanical engineering degree having at least two years experience in the design and/or construction of vertical turbine pumps;

6. I have carefully read U.S. Patent No. 5,496,150 to Ernest J. Claxton, III, et al. which was filed on October 14, 1994 in light of my knowledge of the art of vertical turbine pumps that I had acquired prior to October 14, 1994;

7. I have carefully read the above-identified reissue application including all of the claims now pending in light of my knowledge of the art of vertical turbine pumps that I had acquired prior to October 14, 1994;

8. I have carefully read U.S. Patent No. 3,170,646 to Springer and U.K. Patent No. 257,111;

9. I, upon consideration of U.S. Patent No. 3,170,646 to Springer and viewing the teachings presented in U.K. Patent No. 257,111, and in light of my skill in the vertical turbine pump art that I had acquired prior to October 14, 1994, believe that these patents would have taught a person of the qualifications described in paragraph 5 as of October 14, 1994, the following:

A. Springer is directed to a radial centrifugal pump having a horizontal screw and impeller (see Fig. 9). The Springer radial centerfugal pump is driven by a tractor take-off as shown in Figures 1 and 2. A pipe section 54 is lowered

into the fluid to be pumped as shown in Figure 2 such that the radial centrifugal pump is kept out of the water or other fluid to be pumped. In other words, Springer's pump is not a submerged pump. Thus, all of the internal bearings within Springer's pump are not subjected to water. Indeed, as further shown in Figure 11, the bearings 299 are lubricated bearings that are not subjected to water and are, instead, kept out of the water. As further shown in Figure 11 and described in column 6, line 60 through column 7, line 36, Springer also teaches that the bearings 299 may be disposed within a hollow tubular support member 300 that is fixed to the casing 248 via flange 304 and bolts 306. As described in column 6, lines 69-74, this hollow tubular support member 300 has an inner end that is inclined at 306 and engages an inclined bottom or seat 308. The purpose of which is to centralize the sleeve 300 so that the impeller pump shaft 296 will be correctly oriented to retain the impeller 252 in a correct orientation in relation to the housing 248. Seals 310 are provided so that the bearings 299 do not leak lubricant. The bearings 299 are further described in column 7, lines 30-36 as the self-aligning type so that the tubular sleeve 300 will be properly aligned with the inclined end 306 that is engaged with the inclined bottom 308 of the longitudinal bore 302. Thus, Springer teaches a hollow tubular support member 300 with inclined end 306 the purpose of which is to correctly oriented the impeller pump shaft 296 relative to the impeller 252. In other words, Springer utilizes the hollow tubular support member 300 to correctly align the elements and not to provide a removable bearing cartridge. Indeed, the lubricating bearings and seals utilized

by Springer would suggest to one of ordinary skill in the pump art that the hollow tubular support member 300 is not intended for removability, but instead for alignment purposes. Therefore, I do not believe that a person of at least the qualifications of paragraph 5 at least as early as October 14, 1994 would have been motivated to utilize Springer's hollow tubular support member 300 (that is intended for alignment purposes) for an entirely different purpose of providing a removable bearing cartridge in a vertical turbine pump. I further believe that a person of at least the qualifications of paragraph 5 and at least as early as October 14, 1994 would not have been motivated to combine the alignment structure of Springer with the vertical turbine pump of U.K.

257,111.

B. Further, one of the skill of at least paragraph 5 as of at least October 14, 1994, would not have been motivated to consider Springer's hollow tubular support member that is utilized for alignment purposes in a wholly different application such as a vertical turbine pump for the wholly different purpose of providing a removable bearing cartridge. The reasoning is that Springer's hollow tubular support member is clearly for the purpose of alignment between the impeller pump shaft 296 and the impeller 252 and not for a removable bearing cartridge. Indeed, the lubricated bearings 299 are not subject to frequent failure because they are not subjected to water or other liquids. Thus, one of ordinary skill in the art, as defined in paragraph 5 and as of October 14, 1994, would understand Springer's non-submerged pump as providing an

improved alignment structure for aligning between the impeller pump shaft and the impeller;

C. Further, Springer's design is for the purpose of handling clear liquids, and not liquids containing suspended solids. The absence of the necessity for an enclosing tube arrangement around the shaft simplifies the bearing arrangement. Thus, one of ordinary skill in the art would not be motivated by Springer to develop a bearing cartridge removable from the wetted end of the pump.

10. I have carefully read the originally filed patent claimed as well as the presently pending claims 1-17, 29-22, and 24-26 of which claims 1, 6, 15, and 20 are independent;

11. I, being one of at least ordinary skill in the vertical turbine pump art, on October 14, 1994, being presented with the Springer patent and the U.K. 257,111 patent would not have considered obvious to utilize Springer's hollow tubular support member together with U.K. 257,111's vertical turbine pump structure to provide a removable bearing cartridge removable from an upstream section of the bearing casing by removing the impeller and disengaging the bearing cartridge from the diffuser core thereby permitting the bearing cartridge to be slid off the drive shaft in an axial direction. One reason I hold this opinion is that Springer's hollow tubular support member is only removable from a downstream direction even if it could be considered a

removable bearing cartridge which in my opinion it is not because it is intended for alignment between shaft 234 and impeller 252.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2/14/00

Date

Daniel R. Justis

Signature